

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

---

11-15-2020

## DIGITAL LITERACY SKILLS AMONG LIBRARY PROFESSIONALS IN JIMMA UNIVERSITY LIBRARIES

Tadele Mulat  
tadele.66@gmail.com

Munusmay Natarajan  
Associate Professor, drnatarajanm@gmail.com

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#)

---

Mulat, Tadele and Natarajan, Munusmay, "DIGITAL LITERACY SKILLS AMONG LIBRARY PROFESSIONALS IN JIMMA UNIVERSITY LIBRARIES" (2020). *Library Philosophy and Practice (e-journal)*. 4629.  
<https://digitalcommons.unl.edu/libphilprac/4629>

# DIGITAL LITERACY SKILLS AMONG LIBRARY PROFESSIONALS IN JIMMA UNIVERSITY LIBRARIES

**Tadele Mulat#**

*#ICT Team Leader for Library, Jimma University, Jimma*

**Dr. M. Natarajan\***

*\*College of Natural Sciences, Dept of Information Science, Jimma University, Ethiopia.*

*\*E-Mail: drnatarajanm@gmail.com*

## **Abstract**

*This paper discussed the contemporary digital literacy skills among library professionals in Jimma university libraries of Ethiopia. The study was guided by six objectives and research questions. The design of the study is descriptive survey and the population consists of all librarians from Jimma university libraries. The instrument used to generate data is the questionnaire and the data generated was analyzed using simple percentages and frequency count for research questions and SPSS version 20.0. The findings show that electronic mailing, internet use, social networking and mobile phones use are the major digital literacy skills amongst librarians. Also found that librarians acquired the skills through attending workshops, formal education and by you tube. The service delivery is highly positive with the level of proficiency is moderate as maximum professionals. The constraints are the availability of electricity and internet. It was also found that they acquired digital literacy skills by the use of Web OPAC, digital library and institutional repository. Researchers made useful recommendations.*

**Keywords:** Digital literacy, Jimma University, ALA, UNESCO, media literacy, digital library.

## **INTRODUCTION**

Libraries are key institutions in the context of achieving global literacy. UNESCO/IFLA Public Library Manifesto (1994), outlined the key missions relating to information, literacy, education and culture are at the core of public library services. Libraries are dedicated to provide free and equitable access to information, be it in written, electronic or audiovisual form, collecting knowledge of the past and present, and making it available to the general public. They always make a special effort to serve all members of society as a key part of their mission, introducing innovative services for their community of users, and playing a

significant role in strengthening democratic processes. Among these innovative services are non-print activities, such as lectures, films and discussion groups, or the encouragement and facilitation of the return of adults to learning and vocational training. All of these services underscore the role that libraries play in promoting literacy, and at UNESCO this is a role that is emphasized as crucial to global efforts to make literacy central to all levels of education.

In many contexts, information literacy and Internet searching is widely recognized at schools, academic institutions and the workplace was found by Cheuk (1998). Internet searching become part of information literacy (Acikalin, 2009; Sorensen, 2007). According to Aharony (2010), “Information literacy is a necessary skill that is useful in every aspect of life, especially in the twenty- first century where we are inundated with vast amounts of information”. Teachers understanding of information literacy and Internet search skills increases access to a vast array of information resources. It enables them to tailor information according to their own circumstances and improves the quality of learning material and supports everyday life problems such as HIV-AIDS, domestic violence and issues of environmental protection. According to Fourie & Krauss (2010), Information literacy (IL) is the set of abilities enabling individuals to “recognize when information is needed and to locate, evaluate, and use effectively the needed information” (American Library Association, 1989). IL is increasingly important in the contemporary environment of rapid technological change and proliferating information resources. Individuals are faced with diverse, abundant information choices—in their academic studies, in the workplace, and in their personal lives—because of the escalating complexity of information sources and formats. Information is available through libraries, community resources, special interest organizations, media, and the internet. Increasingly, information comes to individuals through unfiltered channels, raising questions about its authenticity, validity, and reliability. Also, information is available through multiple media, including graphical, aural, and textual modes, and these pose new challenges for individuals in evaluating and understanding the content. The uncertain quality and expanding quantity of information pose big challenges for society. Abundance of information in itself is not enough to build the information society. What matters most is having the necessary skills and abilities to effectively use information.

Digital Literacy (DLi) forms the basis for lifelong learning. Developing lifelong learners is central to the mission of higher education institutions. It is to develop the intellectual abilities of reasoning and critical thinking by the students. Also assist for constructing a framework for learning how to learn and provide the foundation for continued growth throughout their careers.

DLi is a key component and contributor to lifelong learning, as it extends learning beyond formal classroom settings and provides practice with self-directed investigations as individuals move into internships, first professional positions, and increasing responsibilities in all areas of life. The main goal of this research is to find out the digital literacy skills of LIS professionals for providing the services in hybrid environment at Jimma University for quality education.

## **JIMMA UNIVERSITY**

Jimma University (JU) located in Jimma (354 kms southwest of Addis Ababa) is one of the higher learning institution / universities in Ethiopia and is located in Oromia Region, Jimma Zone. It offers educational programs and researches, which lead toward the award of degrees in different fields of studies. It was established in December 1999 with the amalgamation of the Jimma College of Agriculture (founded in 1952) and the Jimma Institute of Health Sciences (founded in 1983). It is diversified at four locations as per the subject coverage viz. i) Main campus (includes Medicine, Social Sciences, Natural Sciences, Law and Language divisions) ii) Jimma university of Agriculture & Veterinary sciences iii) Jimma Institute of Technology (includes computer science and Engineering) and iv) Jimma University for Business and Commerce. It has 13 libraries in total, but main ones are four at these campuses. Others are departmental libraries. The Main campus library is mainly involved for acquisition of resources for all, including the e-resources access permissions for all the libraries. It also uses ABCD software for library automation and created Digital library and Institutional repository for the main campus.

Library science professionals in all the four libraries includes professionals, semi-professionals and non-LIS professionals for supporting the activity for providing the resources and services to students, teachers and researchers at different levels. Competent information provider and information professionals are the key element in the provision of the basis through which all citizens can effectively communicate, thereby facilitating the achievement of the information/knowledge society. The high numbers of skilled Information Science professionals are now developing the necessary applications for the information organization, storage, retrieval and access and will administer the information systems and decide on system acquisitions by various organizations, information resource centers, information agencies, archives and libraries. The policies currently being implemented in Ethiopia is promising and due to the expected great active role of the profession in the country's social, political and cultural spheres. An understanding of users must guide information systems design, just as

knowledge of technical possibilities and constraints must shape user services towards building knowledge society (Annual Report, 2015).

## **STATEMENT OF THE PROBLEM**

Digital literacy (DLi) can be a great tool for development, as the advances in the use of technology can improve economic opportunities for the poor, increase delivery of services to the underserved, improve management and benefit social change. Students and teachers are in need of current information for a variety of activities on education purpose. In the developed countries, universities are continuously updating their curriculum for digital literacy to keep up with accelerating technological developments. This often includes computers and a wide range of digital gadgets in the libraries which are proficiently handled and managed by librarians for proper service delivery for users. The use of educational software, digital gadgets and resources to teach curriculum, library and course materials are now being made available to students and library users. The influx of information, globalization and the use of digital technology has made the world a global village where access and use of digital technology has become common place. There is lack of utilization of digital literacy skills in our libraries, many librarians in Jimma seem to lack skills on how to operate the computer, access the email or interact through the internet. Many librarians also seem not to possess the skills to use the computer to access information. Librarians world over are faced with so many challenges on their jobs in the acquisition of hybrid information resources, their organization, retrieval and dissemination to all types of potential users for their accessibility and utilization. Librarians however are not finding it very easy to manage the influx of information.

Ogunsola (2004) asserted that it must be realized that many Nigerian libraries, especially in the universities, face various problems in their attempts to computerize their library operations. These have constituted a challenge in the provision, maintenance and management of information resources in many academic libraries all over the nations. Therefore, in view of this scenario, the present research is necessitated with the following research questions:

1. What are the types of DLi skills possessed by librarians?
2. How did librarians acquire their DLi skills?
3. What is the level of use of DLi skills?
4. What influence does the use of DLi skills have on service delivery among librarians?
5. What is their level of proficiency of DLi skills among librarians?
6. What are the constraints of the use of DLi skills among librarians?

## OBJECTIVES AND SCOPE

The objectives of this study are to find out the digital literacy skills by the librarians and use certain digital literacy skills in all the four main university libraries of Jimma University and how these skills influence their jobs as professionals. The specific objectives are to:

- ✚ Identity the types of digital literacy skills (DLiS) librarians possess
- ✚ Find out how librarians acquire their DLiS
- ✚ Determine the level of use DLiS
- ✚ How does DLiS possessed by librarians help in service delivery?
- ✚ Level of proficiency with DLiS
- ✚ Find out constraints to the use of DLiS

This study was bounded to digital literacy skills of LIS professionals in all the four main libraries for quality education of students, teachers and researchers of Jimma University.

## LITERATURE REVIEW

### Concept of Digital Literacy

Bawden (2008) defined digital literacy (DLi) is the set of attitudes, understanding and skills to handle and communicate information and knowledge effectively, in a variety of media and formats. Bell and Shank (2008) quoted in their work that

*Digital literacy is the ability to use digital technology, communication tools or networks to locate, evaluate, use and create information. It is the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers. It is also a person's ability to perform tasks effectively in a digital environment. Digital literacy includes the ability to read and interpret media, to reproduce data and images through digital manipulation, and to evaluate and apply new knowledge gained from digital environments".*

“Digital Literacy” is therefore an important component of literate societies, enabling individuals to locate, organize, understand, evaluate and analyze information using digital technology. It involves a working knowledge of current high-technology and an understanding of how it can be used, and libraries can be proactive in assuming the responsibility of educating the community of users to make them digitally literate. DLi means the ability to use technology competently, interpret and understand digital content and assess its credibility, create, research, and communicate with appropriate tools.

According to Wikipedia (2018), digital literacy is the knowledge, skills, and behavior used in a broad range of digital devices such as smart phones, tablets, laptops and desktop PCs, all of which are seen as network rather than computing devices. Digital literacy initially focused on digital skills and stand-alone computers, but the focus has moved from stand-alone to network devices. Digital literacy skill is a more contemporary term but is limited to practical abilities in using digital devices (such as laptops and smart phones). It is the ability to effectively and critically navigate, evaluate and create information using a range of digital technologies. Digital literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information requiring both cognitive and technical skills (ALA, 2012). Characteristics of digital literacy are: i) It supports and helps develop traditional literacies ii) It's a lifelong practice iii) It's about skills, competencies and critical reflection on how these skills and competencies are applied iv) It's about social engagement.

### **Need for Digital Literacy for Libraries in the 21<sup>st</sup> Century**

This 21<sup>st</sup> century requires codes of conduct and communication skills, to ensure that the powerful media and technologies are used responsibly and ethically. In a study conducted by Honey *et al* (2005) on critical issue, using technology to improve student achievement, it was discovered that the digital literacy skills critical to students' academic success are underpinned in the following areas and authenticated. They are: "Communicating effectively using online platform; Analyze and interpret data; Understand computational modeling; Manage and priorities tasks; Engage in problem solving and Ensure security, safety and use strategies known to acknowledge, identify and negotiate 21st century risks". The LIS professionals should provide the resources and services at the appropriate level to support the intellectual, cultural, and technical development of students, teachers and researchers. Martin (2006) said DLi requires certain skill sets that are interdisciplinary in nature. Information, media, and technology; learning and innovation skills; and life and career skills as the three skills sets that individuals need to master in order to be digitally literate in the 21st-century.

### **Digital Resources and its Use in University Libraries**

Digital resources are those information resources like CD-ROM, Internet, OPAC, e-books, e-journals and e-databases that can only be accessed by the use of computers and other ICT devices. Now libraries are creating digital libraries and institutional repositories also and made them available through library web pages. These materials may require the use of a peripheral device directly connected to a computer, for example, CD-ROM drive or a

connection to computer network or the Internet. Van Deursen and van Dijk (2009) have demonstrated that differences in the level of digital literacy depends mainly on age and education level. Generally, then, a digitally literate person is able to search and understand desired information, express and share opinions or thoughts freely, and have a better understanding of those of others (Kwon and Hyun, 2014).

### **Features of Digital Literate Person**

American Library Association (2012) states that a digital literate person is possessing following features:

- a) Possesses the variety of skills – technical and cognitive – required to find, understand, evaluate, create, and communicate digital information in a wide variety of formats;
- b) Is able to use diverse technologies appropriately and effectively to retrieve information, interpret results, and judge the quality of that information;
- c) Understands the relationship between technology, life-long learning, personal privacy, and stewardship of information;
- d) Uses these skills and the appropriate technology to communicate and collaborate with peers, colleagues, family, and on occasion, the general public; and
- e) Uses these skills to actively participate in civic society and contribute to a vibrant, informed and engaged community.

Thus a digital literate person is competent enough to handle and manage digital information in an effective and efficient manner.

### **Problems Affecting the Use of Digital Resources**

The use of library's digital resources by librarians and library users is hindered by non accessibility of digital resources. This contradicts the easy accessibility of the internet search engines like Google, Yahoo and others where a single keyword search could result in thousands of hits, no matter the topic. In the library, students have to choose a particular database and be more selective in the search words they use (Waldman, 2003). The study of Watts and Ibegbulem (2006) on the barriers of the use of electronic resources available at the medical library of the College of Medicine, University of Nigeria, Nsukka revealed that lack of an adequate ICT infrastructure and affordable online access, absence of in-depth digital skills and information searching skills among library staff and users are barriers to the use of electronic resources.



## METHODOLOGY

The descriptive survey design was adopted for the study. The population of the study comprises of all librarians (Table 1) of the four campuses viz seven university libraries of Jimma University. The entire population of 206 was used as sample. The questionnaire has been used as the research instrument for data collection and all the library professionals have filled (100%) and returned. Data collected has been analyzed using simple percentages and frequency counts for research questions and the Statistics Package for Social Sciences (SPSS) version 20.0 for test hypotheses.

## DATA ANALYSIS

The collected questionnaires from all (206) the library professionals (100%) respondents are analyzed using Tables and Graphs and data interpretation is done with the population as given below in Table 1:

*Table 1. Population of the study*

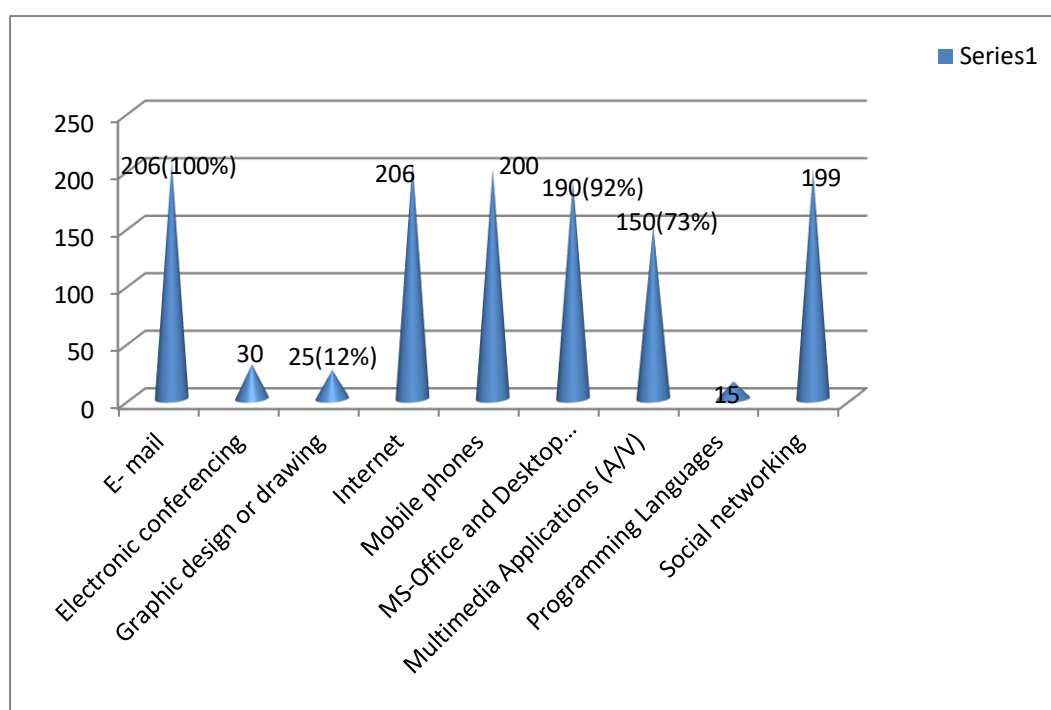
No.	Branch Library	Total number of professional librarians	Percentage
1	Agriculture & Veterinary Sciences	31	15.04
2	Business and Economics	10	4.85
3	Health Sciences	45	21.84
4	Institute of Technology	32	15.53
5	Law and Governance	25	12.13
6	Natural Sciences	28	13.59
7	Social Sciences	35	17
	<b>Total</b>	206	100

It shows that the maximum number of library professionals is employed in Health sciences library. The collected data for the types of digital literacy skills possessed by library professionals is listed below in Table 2:

*Table 2. Type of DLi skills possessed by the respondents*

Kind of IT Skills	Frequency	Percentage
E- mail	206	100
Electronic conferencing	30	14.56
Graphic design or drawing	25	12.13
Internet	206	100
Mobile phones	200	97.08
MS-Office and Desktop Publishing Tools	190	92.23
Multimedia Applications (A/V)	150	72.81
Programming Languages	15	7.28
Social networking	199	96.6
Total		100

It is found that all 206 library professionals (100%) possess the e-mailing and Internet skills, mobile phone and social networking use being 200 (97%), knowledge of MS-Office by 190 (92.23%), multimedia applications by 150 (73%), e-conferencing by 30 (14.5%), graphic design or drawing by 25 (12%) and programming languages by 15(7%) only. This shows that the digital literacy skills of the LIS professionals are very good. The same is given below as bar diagram Fig 1.



**Fig 1. Type of DLi skills possessed by LIS professionals**

The LIS professionals were requested about the types of internet searching tools used by them (multiple answers possible) in the questionnaire, by which they developed the digital literacy competence. The collected data is given below as Table 3:

**Table 3.Types of Internet Searching Tools used**

Internet Searching Tools used	Frequency (Percentage)
Digital Libraries	160 (77.66)
Institutional Repositories	105 (50.97)
Online Bibliographic Databases	195 (94.66)
Subject Gateways (In their respected subject area)	67 (32.52)
Web OPAC	206 (100)
Websites	206 (100)
Total	939

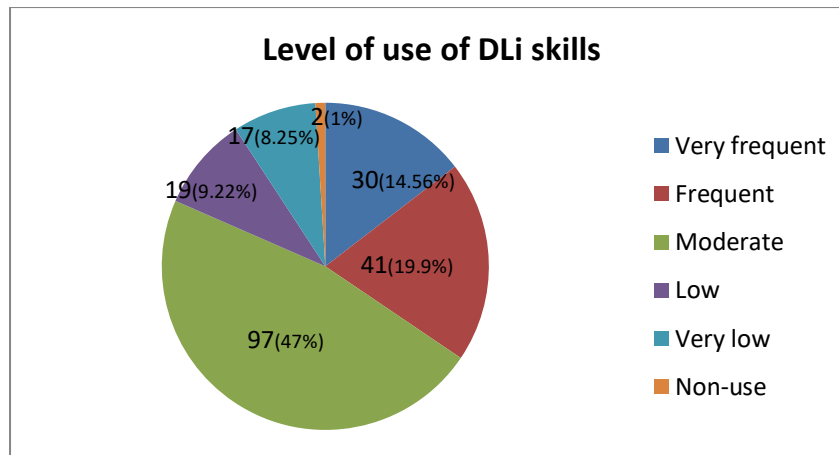
From the Table 3, it is found that all the LIS professionals are using Web OPAC and websites (100%) as searching tools, 195 (95%) professionals are using also online bibliographic DBs, Digital libraries are used by 160 (77%), Institutional repositories are used by 105 (51%) and subject gateways are used by 67 (33%) professionals. This shows that, as LIS professionals they first use OPAC, and which is a good practice being in the profession and also to find out the availability resources locally.

It was requested about how they acquire DLi skills in the questionnaire. The collected data is given below in Table 4:

***Table 4. Acquisition of DLi skills***

<b>Acquisition technique</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Attending workshops / seminars	201	97.57
By trial and error	50	24.27
Colleague's support	101	49.02
Formal education	195	94.66
you tube	180	87.37
Online training from abroad	9	4.36
Online training inside the country	0	0
Self-study using user's guide	114	55.33
Training offered by library management	172	83.49
Total	1,022	100

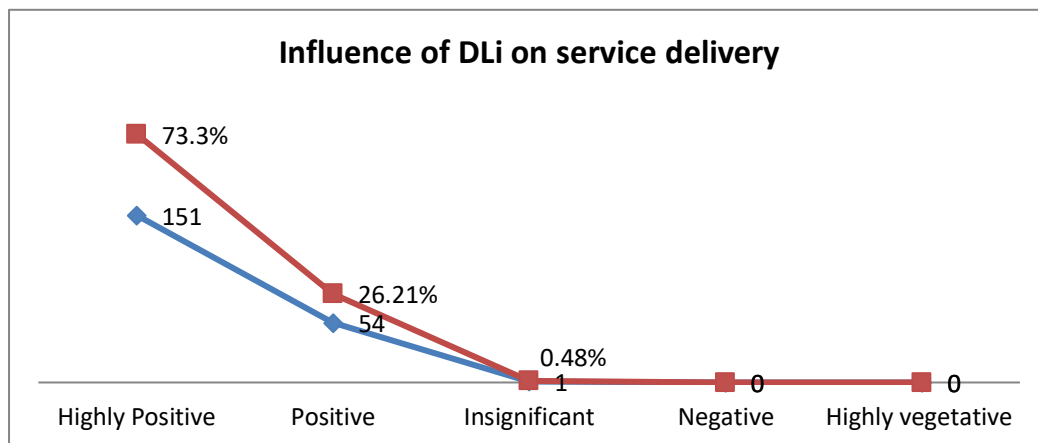
From the Table 4 it is found that the LIS professionals acquired DLi skills through attending workshops / seminars 201 (98%), by trial and error 50 (24%), colleague's support 101 (49%), formal education 195 (95%), you tube 180 (87%), online training from abroad 9 (4%), self-study 114 (55%) and training offered by library management 172 (84%). Hence, it could be inferred that librarians acquire digital literacy skill mostly through attending workshops/seminars, formal education, IT programmes and by training offered by library management. The level of use of DLi skills have been requested in the questionnaire, the collected data is given below as pie chart in Figure 2:



**Fig 2. Level of Use of DLI skills**

Figure 2 showed that the level of use of DLI skills to be 30(14.56%) very frequent, 41(19.9%) frequent, 97(47%) moderate, 19(9.2%) low and 17(8.25%) very low with 2(0.97%) non-use of DLI skills. The results show that the level of use of DLI skills is moderate and frequent.

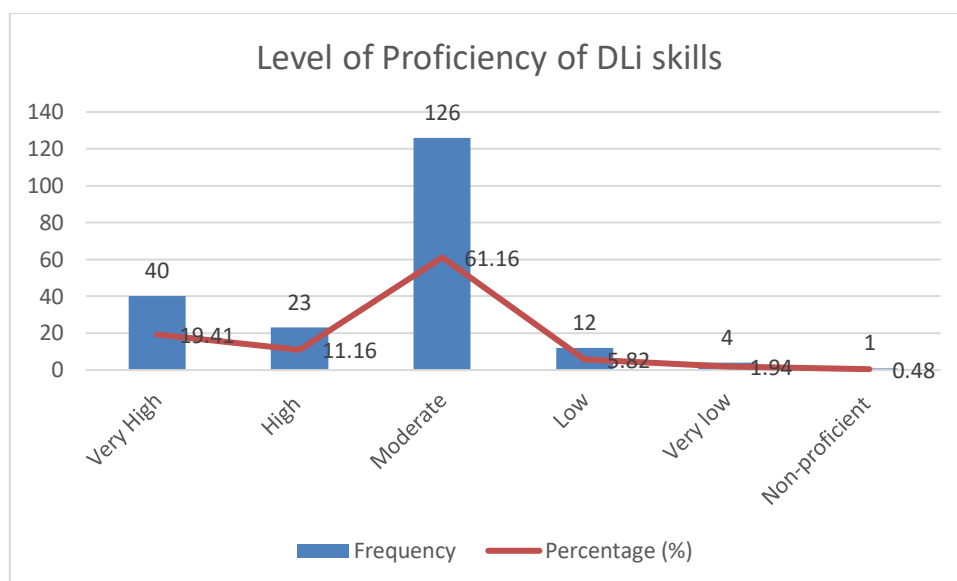
The data collected for the question on “what influence does the use of DLI skills have on service delivery among librarians?” is given below as line diagram in Figure 3:



**Fig 3. Influence of DLI skills on service delivery**

Figure 3 showed that the influence of DLI skills on service delivery is highly positive with 151 (73.3%), 54 (26.2%) positive, 1 (0.48%) insignificant with both no negative and highly negative. Majority of respondents believed that the influence of DLI skills is good for service delivery.

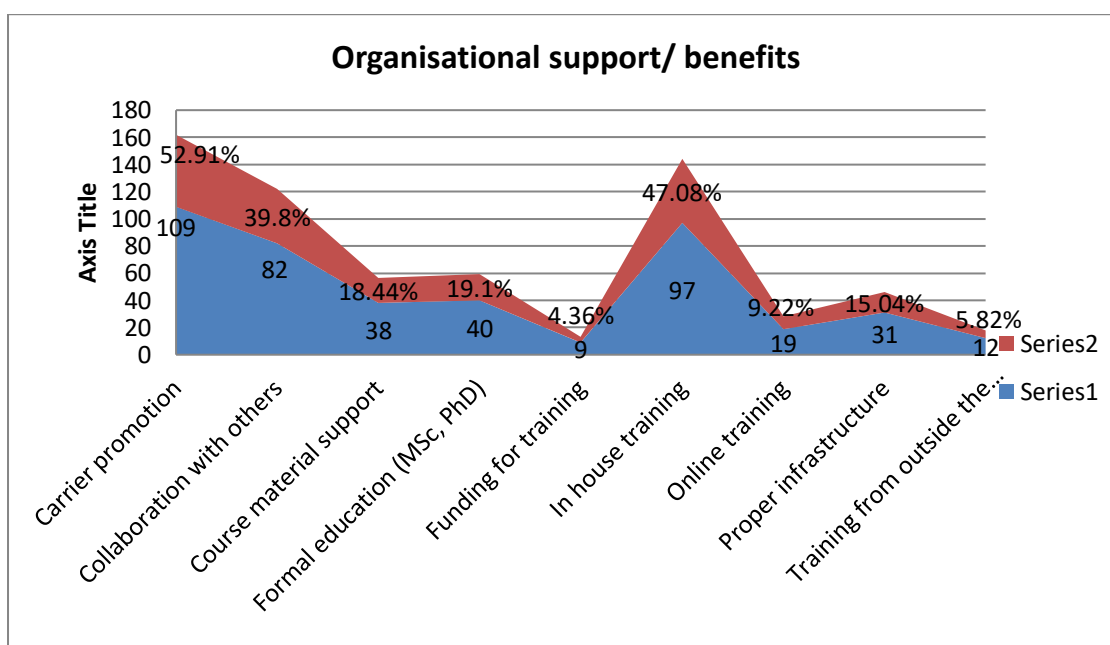
It was requested regarding their level of proficiency of DLI skills among librarians, the collected data is given below in Figure 4:



**Fig 4: Level of proficiency of DLI skills**

Proficiency levels of DLI skills was shown in Fig 4 as 40 (19.41%) very high, 23 (11.1%) high, 126 (61.2%) moderate, 12 (5.8%) low, 4 (1.9%) very low and 1(0.48%) non-proficient librarians. It shows that most of them are at moderate level.

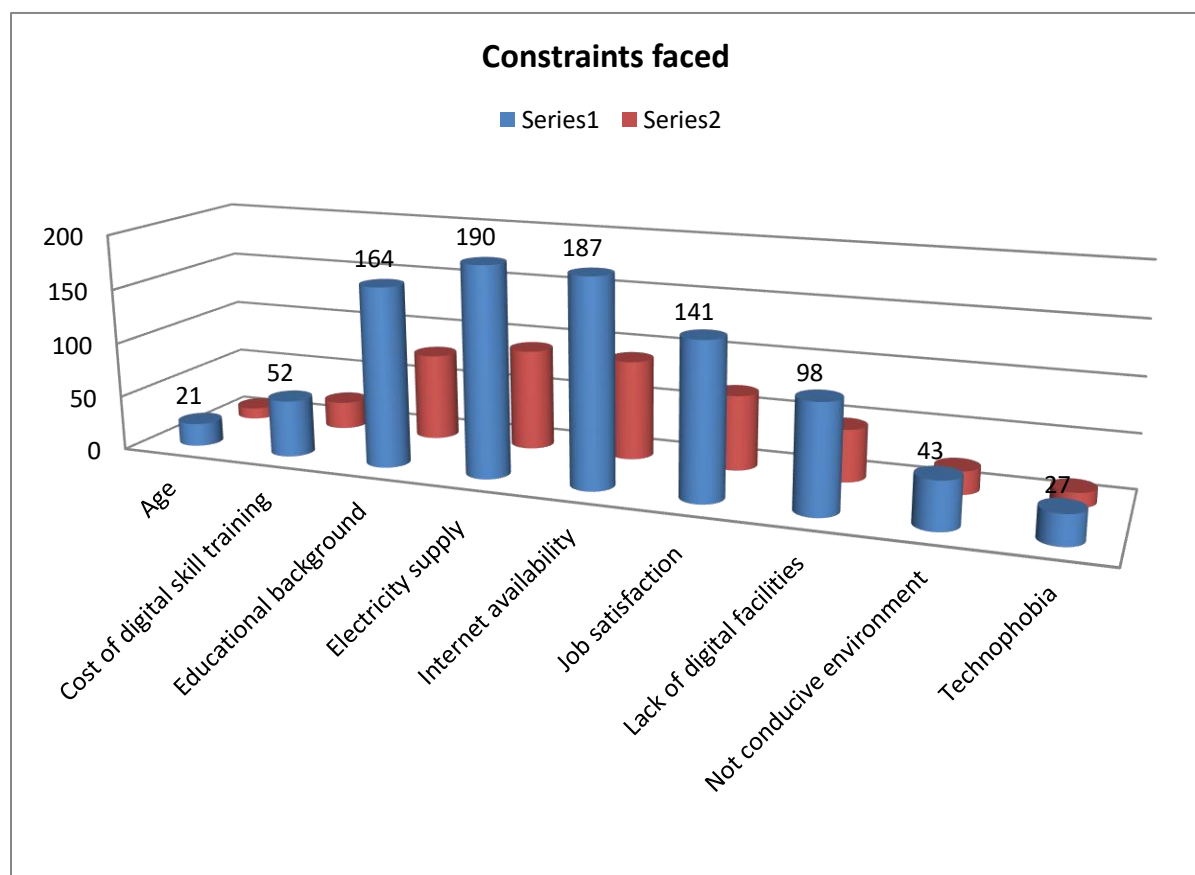
The organizational support / benefits received from the University for making use of DLI skills, the responded data is given below as Area Diagram in Figure 5:



**Fig 5. Organizational support / benefits**

Organizational support provided by the University for the LIS professionals for making use of DLi skills as carrier promotion 109(52.91%), collaboration with others 82(39.8%), course material support 38(18.44%), formal education 40(19.1%), funding for training 9(4.36%), in-house training 97(47.08%), online training 19(9.22%), proper infrastructure 31(15.04%) and training from outside the university 12(5.82%). It shows that most of them are able to get carrier promotion and in-house training support from the University.

The constraints they faced for the use of DLi skills have been collected and the same is given below as bar diagram Fig 6:



**Fig 6. Constraints of the use of DLi skills**

Constraints of the use of DLi skills highlighted in Figure 6 showed that 21(10.1%) was related to age, 52(25.2%) cost of digital training, 164(79.6%) educational background, 190(92%) electricity supply, 187(90.7%) internet availability, 141(68.4%) job satisfaction, 98(47.5%) lack of digital resources, 43(20.8%) no conducive environment and 27(13.1%) technophobia. The results showed that the major constraints include electricity supply, internet availability, educational background and job satisfaction.

## **FINDINGS**

The following findings were identified from the above analysis:

1. Electronic mailing and internet surfing are the major Digital literacy skills amongst librarians; and the next being the use of mobile phones and social networking sites.
2. Librarians acquired DLi skills through attending workshops, formal education and by the use of you tube.
3. The level of use of DLi skills is moderate.
4. The use DLi influence service delivery is highly positive and then positive.
5. The level of proficiency is however moderate for some and very high for others.
6. The major constraints to the use of DLi skills are electricity supply, internet availability, educational background and job satisfaction.

## **RECOMMENDATIONS**

The following recommendations were made from the findings:

1. Management of university libraries should provide training for librarians so as to help update their knowledge in application of digital literacy skills.
2. Management may also check during recruitment of librarians, whether they possess the digital literacy skills, which will help for assisting the users.
3. Ethiopian government may speed up on-going improvement of power supply.
4. Management may depute some of the LIS professionals for digital literacy training, by which they can train others in the profession and users. University libraries may also have all types of digital resources to encourage librarians to use the resources.
5. Library management should continue to mount pressure on organizational management to invest more in digital libraries services / skill development.
6. There is also a need for university libraries management to define clear policies and strategies in relation to information communication technology for library services.

## **CONCLUSION**

This main purpose of this research was to identify the digital literacy skills among the library professionals in Jimma University libraries. It is found that most of the librarians possess the DLi skills. Since libraries have a clear role to play in all three components that constitute literate societies, including enabling populations to acquire and uses basic skills, providing an abundance of printed matter, written records and visual materials, and facilitating text-based

information lifelong learning opportunities. Libraries have become important channels for disseminating the information available in multiple formats to those who are in need of information. Application of ICT has changed the role of librarians from caretaker to gatekeeper of information. The analysis portrayed the Jimma University librarians DLI skills and their use for service delivery as the resources have changed now-a-days to digital environments, which are to be provided to the different types of users in the libraries. So it is very necessary for LIS professionals to keep up to date on different types of literacy skills for using digital tools and technology. It is suggested that training programs may be conducted at regular intervals to all professionals, so that they can be up to date and train the users as per the changing scenario.

## REFERENCES

1. Cheuk, B. (1998). An information seeking and using process model in the workplace: a constructivist approach. *Asian libraries*, 7 (12), 375-390.
2. Açikalin, M. (2009). Pre-service elementary teachers' beliefs about use of the Internet in the social studies classroom. *European journal of teacher education*, 32 (3), 305-320.
3. Sorensen, P., Twilde, J., Childs, A. & Godwin, J. (2007). The use of the Internet in science teaching: a longitudinal study of developments in use by student teachers in England. *International journal of science education*, 29 (13), 1605- 1627.
4. Aharony, N. (2010). Information literacy in the professional literature: an exploratory analysis. *Aslib proceedings: new information perspectives*, 62 (3), 260-282.
5. Krauss, K. and Fourie, I. (2010). Towards information literacy training for teachers in rural South African communities: research in progress. *IDIA Conference*, Nov 2010, Cape Town.
6. Annual Report, Jimma University, Ethiopia, 2015.
7. Ogunsola, L.A. (2004). Nigerian University Libraries and the Challenges of Globalization: The Way Forward. *Electronic JI of Academic and Special Librarianship*, 5 (2-3).
8. Bawden, D. (2008). Digital Literacy, from [http://www.scitopics.com/Digital\\_Literacy.html](http://www.scitopics.com/Digital_Literacy.html) accessed on 09/10/18.
9. Bell, T. and Shank, J. (2008). Digital Literacy, Definition and Resources What is Digital Literacy? <http://cleach.wordpress.com/what-is-digital-li2015teracy/> Accessed on 10/10/18.
10. Wikipedia, New literacies, [https://en.wikipedia.org/wiki/New\\_literacies#Research\\_in\\_new\\_literacies](https://en.wikipedia.org/wiki/New_literacies#Research_in_new_literacies), Retrieved on April 14 2018 (from [http://edutechwiki.unige.ch/en/Digital\\_literacy](http://edutechwiki.unige.ch/en/Digital_literacy))



11. American Library Association, (2012). Digital Literacy, Libraries and Public Policy: Report of the American Library Association Digital Literacy Task Force.
12. Honey, M., Culp, K.M. & Speilvogel, R. (2005). *Critical Issues: Using Technology to Improve Student Achievement*, North Central Regional Educational Laboratory, Illinois.
13. Martin, A. (2006). Literacies for the digital age: Preview of Part I. In Martin, Allan and Madigan, Dan (eds), *Digital Literacies for Learning*, London, Facet Publishing.
14. van Deursen AJ and van Dijk JA. (2009). Improving digital skills for the use of online public information and services. *Government Information Quarterly*, 26 (2), 333–340.
15. Kwon S and Hyun S. (2014). A study of the factors influencing the digital literacy capabilities of middle-aged people in online learning. *Korean Journal of the Learning Sciences*, 8 (1), 120–140.
16. Waldman M. (2003). Freshmen's Use of Library electronic resources and self-efficacy. Available at [http://information.net/ir/8\\_21paper150](http://information.net/ir/8_21paper150) Accessed on 13/10/18.
17. Watts, C. and Ibegbulem, I. (2006). Access to electronic healthcare information resources in developing countries: Experience from the medical library, College of Medicine, University of Nigeria. *IFLA Journal*. 32 (1), 54-61.